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b.) Remarks

Claims 1-25, 27, 30, 31 are canceled from the application, Claims 26, 28, 29 are amended, Claims 32-44 are new.

Turning now to the merits with regard to amended Claim 26, the seamless limitation and the removing step were added to that Claim.

With regard to amended Claims 28-29, Applicant respectfully asserts that the IBM publication does not disclose spin coating polyimide on a roller to produce a seamless embossing surface. The "spin probimide" language in that publication refers to a generally known spinning of a wafer, which is not a seamless roller, after depositing a layer of polyimide on that wafer, a process known in lithography (for example, please refer to the "Polyimide Process" described at http://snf.stanford.edu/Process/Lithography/polyimide.html, copy enclosed with these response). Also, the IBM publication, although it mentions that standard resists require wet development processing following exposure, it actually teaches away from using wet development in a post-exposure preparation of the holographic surface profiles on the described probimide.

The Shvartsman patent is not applicable to amended Claims 28-29, since it is not relevant to polyimides and the process claimed in these Claims. First, Shvartsman uses radiation for hardening its polymers, which is unlikely to work with polyimides, known to be excellent UV filters, hardened by thermal treatment and not irradiation. Shvartsman's material cannot be profiled by interfering laser beams, this is why it is embossed by stamping (Col. 8, section D).

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Applicant believes that a combination of the IMS publication with Shvartsman and other cited publications does not teach or suggest the invention as claimed in independent Claims 26, 28-29 and 43 as presented. A Notice of Allowance is respectfully solicited. Should any questions arise, the Examiner is very much encouraged to contact the undersigned to discuss the pending Claims.

Respectfully submitted,

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Polyimide Process

Singe - 30 minutes at 150C (unless your wafers came out of a furnace or deposition system and are coated with resist within one hour).

Prime

- **Coat** the entire wafer with PIQ Coupler-3
- **Spin** on the headway at 3000 rpm's for 120 to 180 seconds (look for rainbow to fade)
- **Bake** in Blue M Oven for 60 minute ramp from 20C to 350C; 30 minutes at 350C; 60 minute ramp back to 20C.

Polyimide Coat

- Polyimide may be spun up only on the headway coater. (There are chemical incompatibility problems for the other coaters.) **Spin** at slow rpm's and slowly pour PIQ L-100 Polyimide onto wafer (starting at center and working out)
- After wafer is covered, **spin** at 3000 rpm's for 30 seconds to get a 2um thick film (for thicker film, slow spin speed and increas time).
- **Optional**: During the spin, hold a **Q-Tip** by the wafer to catch the "strings" of polyimide so they don't hang on and wrap around the bottom. Some users do this, but I recommend skipping it and keeping the door closed during the spin step.
- **Poke** out any bubbles in the polyimide.
- Place on a hot plate at 105C for 1 minute.
- **Bake** in Blue M Oven 30 minute ramp from 20C to150C; 30 minutes at 150C; 15 minute ramp to 200C; 30 minutes at 200C; 40 minute ramp to 350C; 60 minutes at 350C; 60 minute ramp to 50C

Lithography

- You could use AZ4620 to pattern the polyimide and etch in a drytek etcher. Some users pattern 2000A of Aluminum and use that as a mask to etch the polyimide in the drytek.
- Drytek2 Etch: Power 700W; Pressure 100 mTorr; O2 Flow 100 sccm. Etch Rate 400A/minute.

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